

Fig. 1. Body weight changes. The rats were trained by meal-feeding with a 20% casein diet for 4 days. Then, the rats were divided into four groups, respectively. Group 1 (n=54) was fed a protein-free diet for 14 days, group 2 (n=66) was fed a protein-free diet for 10 days followed by a 20% casein diet for 3 weeks, group 3 (n=66) was fed a 20% casein diet for 31 days, and group 4 (n=30) was drank the only water for 5 days (The data was not shown.). Values are mean \pm SE of six male rats.

Fig. 2. Mucosal wet weights (mg/g of small intestine).

□ : a protein-free diet, ■ : a 20% casein diet,
□ : fasted for 5 days,

The experimental conditions are the same as those described in figure 1 legend. Values are expressed as mean \pm SE of six or five male rats. Significantly differed from the values of a 20% casein diet, *P < 0.05.

Fig. 3. Mucosal protein contents (mg/g of small intestine).

□ : a experimental diet, ■ : a 20% casein diet,
□ : fasted for 5 days,

The experimental conditions are the same as those described in figure 1 legend. In figure 3b, abscissa: 0 means a protein-free diet for 10 days, 1 means a protein-free diet for 10 days followed by a 20% casein diet for 1 week, 2 means a protein-free diet for 10 days followed by a 20% casein diet for 2 weeks, 3 means a protein-free diet for 10 days followed by a 20% casein diet for 3 weeks. Values are expressed as mean \pm SE of six male rats. Significantly differed from the values of a 20% casein diet, *P < 0.05, **P < 0.01.

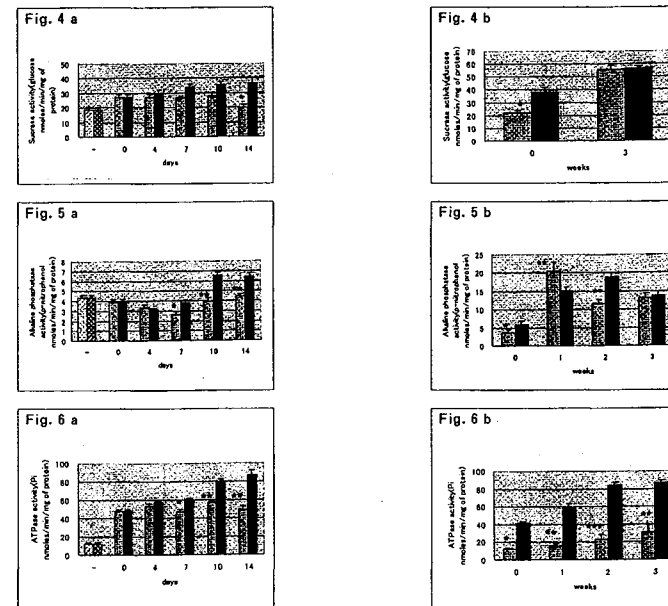


Fig. 4. Influence of a protein-free diet and protein-free diet followed by a 20% casein diet on sucrase activity.

□ : a protein-free diet, ■ : a 20% casein diet,
□ : fasted for 5 days,

The experimental conditions are the same as those described in figure 1 legend. Sucrase activity was measured in homogenates of the small intestinal mucosa of rats. In figure 4b, abscissa: 0 means a protein-free diet for 14 days, 3 means a protein-free diet for 14 days followed by a 20% casein diet for 3 weeks. Sucrase activity was measured in homogenates of the small intestinal mucosa of rats. Specific activity of enzyme is expressed in glucose nmol/min/mg protein, and values are mean \pm SE of six male rats. Significantly differed from the values of a 20% casein diet, *P < 0.01.

Fig. 5. Influence of a protein-free diet and protein-free diet followed by a 20% casein diet on alkaline phosphatase activity.

□ : a experimental diet, ■ : a 20% casein diet,
□ : fasted for 5 days,

The experimental conditions are the same as those described in figure 1 legend. Alkaline phosphatase activity was measured in homogenates of the small intestinal mucosa of rats. In figure 5b, abscissa: 0 means a protein-free diet for 10 days, 1 means a protein-free diet for 10 days followed by a 20% casein diet for 1 week, 2 means a protein-free diet for 10 days followed by a 20% casein diet for 2 weeks, 3 means a protein-free diet for 10 days followed by a 20% casein diet for 3 weeks. Specific activity of enzyme is expressed in p-nitrophenol/min/mg protein and the values are mean \pm SE of five or six male rats. Significantly differed from the values of a 20% casein diet, *P < 0.05, **P < 0.01.

Fig. 6. Influence of a protein-free diet and protein-free diet followed by a 20% casein diet on ATPase activity.

□ : a experimental diet, ■ : a 20% casein diet,
□ : fasted for 5 days,

The experimental conditions are the same as those described in figure 1 legend. ATPase activity measured in homogenates of the small intestinal mucosa of rats. In figure 6b, abscissa: 0 means a protein-free diet for 10 days, 1 means a protein-free diet for 10 days followed by a 20% casein diet for 1 week, 2 means a protein-free diet for 10 days followed by a 20% casein diet for 2 weeks, 3 means a protein-free diet for 10 days followed by a 20% casein diet for 3 weeks. Specific activity of enzyme is expressed in P_iμmol/min/mg protein, and the values are mean \pm SE of five or six male rats. Significantly differed from the values of a 20% casein diet, *P < 0.05, **P < 0.01, ***P < 0.005.